

ADVANCES IN MATHEMATICS 47, 326 (1983)

Book Reviews

I. I. HIRSCHMAN, JR., AND DANIEL E. HUGHES, *Extreme Eigenvalues of Toeplitz Operators*, Springer, 1977, 145 pp.

Someone should make a philosophical study of mathematical ideas of humble origin that end up being applied everywhere, and Toeplitz operators are a prime candidate. Can you visualize a referee's report on Toeplitz's original paper? "An amusing and isolated result, more the result of the author's analytical skill than that of any real importance of the subject. It might be publishable, but the editor would be well advised to discourage a sequel."

U. KOSCHORKE, *Vector Fields and Other Vector Bundle Morphisms—A Singularity Approach*, Springer, 1981, 304 pp.

Mirabile visu! A topology—or is it differential geometry? It is hard to tell any more—book that makes a clean breast of the problem on page one. We hope the author will not be ostracized by the close-knit International Brotherhood of Topologists for having had the audacity to write clearly and understandably.

FRITZ JOHN, *Plane Waves and Spherical Means Applied to Partial Differential Equations*, Springer, 1981, 172 pp.

A welcome reprint of an epoch-opening book written by one of the greatest mathematicians of our time. The no-nonsense style is a relief after the barrage of spherical functions and group-theoretic generalities that are nowadays imposed reading before one is allowed to understand some fascinating new facts about derivatives and integrals.

G. L. LAMB, *Elements of Soliton Theory*, Wiley, 1980, 289 pp.

An expected first of what will probably be a long list of tracts on the soliton fad. The subject is a catchy mixture of operator algebra and explicitly solvable differential equations. How can anyone resist such a combination? So much for the good news. The bad news is that solitons seem to be unbudgingly one dimensional, despite the sly insinuations of computer simulators. Chalk one over to one-dimensional physics.

L. BOLTZMANN, *Theoretical Physics and Philosophical Problems*, Reidel, 1974, 281 pp.

Whoever took the trouble of translating this book—no easy task—performed a double service to scientific mankind, to wit: (a) he made available to today's know-notings a paradigm of clear thinking, and (b) he thereby showed how a great physicist can entertain philosophical thoughts even before he goes gaga. Unfortunately, the reigning mediocrity of our day demands a heavy toll of any scientist who dares stray from routine publication of technicalities, over into the blue yonder of speculation. Even one of the great physicists of our time used to pan younger upstarts with the putdown: "X is prematurely wise."

GIAN-CARLO ROTA
EDITOR